Introduction

The Kettle Face proposed action is based on priorities laid out in the Ferry County Community Wildfire Protection Plan (Schlosser et al. 2006). The KF planning area includes portions of the Protection Plan's "Strategic Planning Area 2." For each community and neighborhood in Ferry County the Community Wildfire Protection Plan (CWPP) rates risk to wildfire and identifies related primary concerns. In the planning area the neighborhood of Deadman Creek is listed as at high to moderate risk from wildfire due to its location outside of the fire district and its limited access points. The communities of Barstow and Boyds, and neighborhoods of Lower Sherman and Nancy Creek were rated at moderate risk. Boyds, located just north of the junction Deadman Creek with Interstate 395, is listed as a community at risk in the Federal Register August 17, 2001 (Volume 66, Number 106). For more information visit the Ferry County Community Wildfire Protection Plan webpage at http://www.ferry-county.com/PDF Files/Ferry-County-CWPP.pdf.

Among the primary concerns listed in the CWPP for this area are access and egress routes in and out of the communities and neighborhoods. During the planning process for the KF project, key routes were identified in and out of the neighborhood of Deadman, and Nancy Creeks, and areas of higher use and importance on National Forest System (NFS) land like campgrounds and radio repeater sites. The fuel conditions along these roads typically include dense canopies or ladder fuels with moderate surface fuel loadings. Should a larger wildfire event occur and threaten to spread along or across these roads, most of them would be unsafe to travel and ineffective as fire breaks to help stop fire spread. The proposed action would create defensible space along these roads while increasing fire fighter and public safety and improving the ability to control fire spread.

Another concern in the CWPP is the buildup of fuels on adjacent forest lands. Stand and fuel conditions were determined throughout the planning area using stand exams, aerial photo interpretation, and field observations. Fuel conditions include vertical and horizontal continuity of dead and live fuels which allows fire to spread easily from one area to another and to move from the forest floor to the canopy. It was determined that should a wildfire occur, crown fire and high severity burns would occur over more than half the forested acres in the planning area (based on 97th percentile weather, see Fire, Fuels, and Forests section Chapter 3 page 80). These fire events are difficult and dangerous to control and surrounding lands and forest values would be at risk. Treatments are needed to reduce fire severity and increase occurrence of surface fires, to improve fire suppression abilities and reduce the risk to homes, structures, infrastructure, and forest values in and around the planning area.

The CWPP puts much of the onus of protecting private structures and property on private land owners. The Forest agrees with this assessment, but understands that proximity of treatments on NFS land can influence the ability of private fuel treatments to succeed should a fire move from public to private land. Therefore, there is a need for the forest to create defensible space along its boundaries to provide treatment depth, where

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possible, to treatments on private land. This would reduce wildland fire risk to homes, structures, infrastructure, and forest values while improving public and firefighter safety during a fire event.

Understanding that the FS cannot treat every acre of land, treatments were strategically placed to achieve the purpose and need with the greatest efficiency. In the proposed action strategic areas for treatment were identified based on their adjacency to private land and critical infrastructure, position in relation to historic fire movement, advantage to fire suppression techniques, ties to previous treatments and natural fuel breaks, and feasibility of treatment. Treatment of the greatest amount of the strategic area will maximize the Forest's ability to achieve the purpose and need.

Underlying the need for treatment are the conditions of the forests themselves. Because of the natural fire regime, historically, the forests were more resilient to fire and other natural disturbances. They recovered more quickly and sustained less damage during fire events. Reestablishing resilient forests similar to those that once occurred is needed for long term sustainability of the area. Forest conditions in much of the proposed treatment areas are extremely susceptible to stand replacing fire and insects and diseases. About half the stands in the planning area were found to be dense enough that inter-tree competition for light, water, and nutrients is causing tree mortality which increases stand flammability and decreases tree vigor making them more susceptible to epidemic insect levels. There is a need to treat these stands to improve stand vigor, decrease the susceptibility to insects, and to promote existing healthy trees of species resistant to fire and strains resistant to disease. This will decrease the flammability of these stands, and the rate of dead fuel produced by them. The Kettle Face Fuel Reduction Project responds to these concerns as they apply on NFS land and in accordance with the Colville National Forest Plan (USDA Forest Service 1988). This project follows the general location and basic methods of treatments as described in the Ferry County CWPP (HFRA Sections 104(d)(2) and (3)), and it links to the National Fire Plan by aiming to address hazardous fuels and forest conditions that are contributing to fuels buildup within the wildland-urban interface (WUI).

Mandatory Stewardship Project Number 001 – Owl Leaning Tree Creation Each: 47

A minimum of 2 per acre would be created. Leaning trees would have a minimum DBH of 4 inches and minimum length of 20 feet and should be angled between 30 and 60 degrees from vertical.

Positioned into another tree in a manner that would prevent failure and provide for some degree of safety i.e. in a fork of a tree etc.

- 1. Positioned in the unit away from roads and other prospective work sites.
- 2. Positioned away from any gap i.e they are not in an area where there is 50 foot clearing around yellow marked trees.

3. Units: 8, 70, 120 Each: 47

Mandatory Stewardship Project Number 002 – Road Decommissioning Miles: 6.0

The end result is a road template with erosion control measures installed, revegetated with grass or existing native species, and closed to discourage motorized travel.

- 1. The road template has drainage devices or outsloping for erosion control.
- 2. The roadbed has available material such as logs, stumps, and brush placed in the roadbed to effectively discourage motorized travel.
- 3. The roadbed scarified and seeded in order to establish vegetation.
- 4. The entrance is effectively closed by berm, camouflage, or obliteration.

Units: NA Miles: 6.0

Optional Stewardship Project Number 003 (004) - Fireline Construction Miles:5.5 (machine), 15.7 (hand)

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The end result is establishment of control lines for prescribed burning at locations designated on the ground by the Forest Service. Control lines and clearing limits shall be adequately cleared of ladder fuels, slash, vegetation, and other flammable debris, while minimizing soil disturbance. The Contract Map specifies the estimated locations for fireline construction. All firelines would be located by the Forest Service in advance of construction. All of the fireline may not be needed.

- Machine lines cleared to exposed soil to a 2 foot minimum.
- Handlines cleared to exposed soil to a 18 inch minimum.
- Slash, brush, or similar debris not buried in or under berms created during the construction of fire lines.
- Clearing will be 10 feet wide inside of units and 5 feet on the outside edge of units as measured from the centerline.

Mandatory Stewardship Project Number 005- Biomass Removal Tons: 5,930

The end result is to have all slash removed from the landings and decking areas. Endhauling, chipping, or grinding with removal of biomass would be acceptable measures to meet this treatment.

1. Units: All units. Acres: 2,353 (ground based units)

Tons: 5,930

Performance Work Statements								
End Result	Tasks and Critical Subtasks	Quality Standard	Acceptable Quality Level	Method of Monitoring	Incentives/ Disincentives			
Project 001								
The end result would be 2 leaning trees/acres having a minimum DBH of 4 inches and minimum length of 20 feet and angled between 30 and 60 degrees from vertical.	• Placement of leaning tree into standing live tree.	 Positioned into another tree in a manner that would prevent failure and provide for some degree of safety i.e. in a fork of a tree etc. Positioned in the unit away from roads and other prospective work sites. Positioned away from any gap i.e they are not in an area where there is 50 foot clearing around yellow marked trees. 	90% acceptable level of performance.	Review contractor's Quality Control Plan and perform periodic onsite ocular estimates.	Re-work when below standard. No payment will be made for less than 90% acceptable quality level.			
Project 002								
Close roads to motorized travel and to decommission roads and restore hydrologic functions.	 Drain area by measures such as outsloping and cross ditching. Scarify area to prepare site for grass seeding. Place stumps, rocks, logs, 	 Road entrance is effectively closed to discourage motorized travel. All material discourages motorized travel. Scarification done to prepare site for grass seeding. Site adequately 	90% acceptable level of performance.	Review contractor's Quality Control Plan and perform periodic on- site ocular estimates.	Re-work when below standard. No payment will be made for less than 90% acceptable quality level.			

	or other debris on the roadbed. • Seed area with grass mixture (K-G.6.0#) • Close the entrance by berm, camouflage, or obliteration.	• Application of grass seed meets			
Project 003 and 004 Control lines and clearing limits shall be adequately cleared of ladder fuels, slash, vegetation, and other flammable debris, while minimizing soil disturbance.	 Clear to exposed mineral soil. Clear slash, brush or similar debris. Disperse slash outside clearing limits. 	• Clear to exposed mineral soil to a 2 foot minimum on machine and 18 inches on hand fireline. • Slash is not buried in or under berms created during the construction of fire lines inside the unit. • Slash is well dispersed outside clearing limits. • Clearing is 10 foot wide inside of units and 5 foot on the outside edge of units as measured from the center line of the fire line.	90% acceptable level of performance.	Review contractor's Quality Control Plan and perform periodic on- site ocular estimates	Re-work when below standard.

Performance Work Statements								
End Result	Tasks and Critical Subtasks	Quality Standard	Acceptable Quality Level	Method of Monitoring	Incentives/ Disincentiv es			
Project 005 It is the intent of this item to secure services for grinding and removal of biomass within all units on the Contract Area Map. The contractor shall furnish all labor, equipment, supervision, transportation, supplies, and incidentals to perform the work described in this contract.	 Remove and Grind limbs and tops of Included Timber (A2) and remove DWD and ladder fuels that do not meet specifications of Included Timber. Drain area by measures such as outsloping and cross ditching. Scarify area to prepare site for grass seeding. Scatter remaining slash. Seed area with grass mixture (KT-G.6.0#) 	 All slash scattered. Scarification done to prepare site for grass seeding. Site adequately drained. Application of grass seed meets KT-G.6.0#. 	100% acceptable level of performance.	Review contractor's Quality Control Plan and perform periodic onsite ocular estimates.	will be made			

GENERAL SPECIFICATIONS FOR ALL PROJECTS

The Contractor may use yarding equipment, mechanical treatments, hand treatments, or other methods to reduce slash and the related fire hazard and resistance to control. Possible options are, but are not limited to, in place slash treatments such as lop and scatter, or walking over slash with equipment, piling, chipping or grinding, and removal.

The Forest Service has identified all commercial timber unit boundaries on the ground with flagging, tags and paint on boundary trees. The outside boundary lines for the other units have been flagged and tagged. No internal boundaries within the other units have been, nor will they be flagged by the Forest Service, but the Forest Service SHALL approve any boundaries suggested by the operator before work in those units can be started.

DEFINITIONS

<u>Biomass:</u> Any coniferous surface fuel or slash or other coniferous material not utilized for sawtimber or chips.

<u>Calendar Days:</u> Every: day shown on the calendar, Saturdays, Sundays and holidays included.

<u>Chipping or Grinding</u>: Use of mechanized equipment to reduce slash and non-merchantable material to a size which will meet local mill utilization standards and then are hauled off site.

<u>Contract Administrator:</u> The on-site contract administrator for the Mandatory and Option work items who represents the Contracting Officer. The duties and responsibilities of the CA are defined in the letter of designation issued by the Contracting Officer.

Contract Time: See Period of Performance.

<u>Damage</u>: Defect or deformity of a tree resulting from agents such as wind, snow, animals, insects, disease, and equipment, and evidenced by such things as dead or broken tops or trunks, crooks, and deep scars or damage to the bark on more than $\frac{1}{4}$ of the circumference of the tree.

<u>DBH</u> (<u>Diameter Breast Height</u>): A point on the bole of a tree 4.5 feet above the ground measured on the up hill side.

<u>Designation of Sawtimber</u>: In all timber harvest units sawtimber has been designated for cutting with a blue paint band at, or above, DBH and a butt mark below stump height; or designated as leave trees with an orange paint band at, or above, DBH and a butt mark below stump height. Merchantable trees to be removed in the Optional Units will be designated by the Contractor as per specifications supplied by the Forest Service.

DIB: Diameter inside bark.

 $\underline{\text{DWD}}$: Down Woody Debris consisting chiefly of dead and down material prior to operations.

<u>Gaps:</u> Areas designated where all trees are to be cut for a designated distance in feet from a tree marked with Yellow paint.

<u>Ladder Fuel:</u> Small diameter (<6.0 DBH) conifer trees growing under other more desirable trees to reduce risk of fire moving from the ground to the tree crowns.

<u>Leave Trees</u>: Trees not designated for removal or other prescribed treatment and all hardwoods regardless of size.

<u>Lop and Scatter:</u> An intermediary treatment conducted prior to piling, underburning, or jackpot burning. Lop and scatter consists of bucking and possibly limbing of trees to increase fuel consumption during burning, reduce the height of the residual slash in the unit, or to facilitate piling or decomposition.

<u>Period of Performance:</u> (also Performance Period or Contract Time). The number of calendar days allowed in the contract for completion of contract work.

Piling: Creating clean, burnable piles from fuel materials on site.

<u>Quality Assurance</u>: The actions taken by the Government to assess the results to determine that they meet contract requirements. The methods for quality assurance are described in the Quality Assurance Surveillance Plan (QASP).

 $\underline{\text{Quality Control}}$: Those actions taken by a Contractor to control the production of outputs to ensure that they conform to the contract requirements.

Slash: Boles of cut trees, tops and/or limbs created by the Contractor's operations.

<u>Skips:</u> Areas designated where all trees are left to be uncut for a designated distance in feet from a tree marked with Orange paint.

<u>Surface Fuels:</u> Existing dead, woody material already on site prior to operations.

 $\overline{\text{Thinning}}$: The process of selecting and leaving the largest, most fire resistant trees (including those showing good health characteristics), to meet the average spacing rate listed for the units.

Trees that are selected to be left to meet the stocking level specified shall be desirable leave trees. The Contractor shall first select the most desirable species of trees as defined in item 1 below. The Contractor shall then select the most desirable leave trees as defined in item 2 below. In areas where there are not enough trees with the most desirable characteristics available to meet the specified stocking level, the Contractor shall select less desirable leave trees listed in item 2.

- 1. Desirable Species the most fire tolerant defined as follows: Ponderosa pine, white pine, western larch, Douglas fir, lodgepole pine and others in this order of preference. Criteria for selection between species is as follows, preferred species that are at least half the height of a less preferred species will be left as the leave tree, given desirable tree characteristics are present.
- 2. <u>Most Desirable Leave Trees:</u> Trees that possess the following characteristics shall be the first choice for desirable leave trees:
 - a. Dominant Trees: Trees which are taller on the average when compared to other trees in the unit. These trees are not severely suppressed.
 - b. Codominant Trees: Trees that are taller on the average when compared to other trees in the unit. These trees are not severely suppressed.
 - c. Healthy Foliage: Foliage shall be dark green in color with a full crown over one third or more of the trees.
 - d. Straight Bole: The bole or stem of the tree shall be relatively straight. Trees shall have a single branch terminal.
 - e. Free of Physical Damage: Trees shall not have physical damage from fire, animals or weather on more than one-fourth of the circumference of the bole or more than three feet of length of the bole.
 - f. Free of Disease Damage: Trees shall not have disease damage such as dwarf mistletoe, gall rust, peridermium cankers and stalactiform rust. Symptoms of gall rust are galls on the branch and stem. Symptoms of peridermium cankers are the presence of cankers on the bole and branches. Symptoms of stalactiform rust are elongated, diamond-shaped cankers and associated resin.
 - g. Free of Insect Damage: Trees shall not have insect damage from Mountain Pine Beetles and Ips Beetles. Symptoms of Mountain Pine Beetles are small red to yellowish pitch tubes (less than one-fourth inch) and boring dust in bark crevices and round the base of the tree. Symptoms of Ips Beetles are dead tops and group killings without pitch tubes.
- 3. <u>Less Desirable Leave Trees:</u> When the prescribed stocking level of most desirable leave trees cannot be achieved with trees that possess the most desirable characteristics, the Contractor shall select trees with less desirable characteristics in the priority listed below:
 - a. Minor Defect: Trees with minor defect such a sharp crook or a small amount of animal damage.
 - b. Suppressed Trees: Trees that have been severely suppressed. Extremely short or nonexistent internodes, twisted gnarled stems, or an extreme sparseness of foliage usually characterizes them.
 - c. Other Live Trees: Trees other than insect or disease damaged trees with 1/4 live crown.
 - d. Forked Trees: Those trees with two or more terminal leaders.

e. Physical Damage: Trees that have physical damage on half or more of the bole circumference and greater than three feet in length. Physical damage may be caused by equipment, falling trees, lightning, wind, animals, etc.

<u>Spacing</u>: The horizontal distance from the trunk of one leave tree to the trunk of the next nearest leave tree. Average spacing is calculated from the leave trees per acre.

<u>Stream course</u>: The area along a stream with riparian vegetation and other riparian characteristics. Stream courses are noted on the Contract Area Map.

<u>Whip felling</u>: The cutting of all trees in the mandatory units which are not designated to leave, do not meet A(T).2 specifications, are not included as K(T)-C(T).1.1 material for removal or are taller than 24 inches in height above the ground.

CONTRACTOR WORK REQUIREMENTS AND STANDARDS

Road Access: The Contractor may access the units from forest roads indicated on Contract Area Map. Some units require the Contractor to walk; access is to the access point noted on project map.

Walk-in areas: NA

Locked gates: In cases where units are behind locked gates, the Contractor shall close and lock gates after entering or exiting each gate and will be subject to all other restrictions of administrative use. The Contractor shall be permitted to drive from the locked gate to the unit with only the minimum number of vehicles necessary for efficient transport of the crew and equipment as well as product removal.

Tree Removal: All Included Timber agreed to will be designated before cutting and/or removal.

Leave trees: 1) All snags that do not pose a hazard to operations as defined by the Washington State Labor and Industry standards, or are not identified for removal in the fireline construction end products specifications shall be considered leave trees and left uncut. 2) all designated leave trees both in the treatment units and in the Optional Units shall be left uncut and undamaged. Operations shall be conducted in such a manner so as to not damage any leave trees during operations. See the contract provisions for penalties related to damage and/or cutting of commercial timber within the project area.

Unless otherwise approved by the Contracting Officer, all non-merchantable trees removed under the Mandatory and Optional work items shall be completely severed below the lowest live limb and within six (6) inches of the ground at an angle parallel to the slope, except when prevented by natural obstacles. A live limb is a limb of any size that has green needles attached. Cut trees shall be secured so they do not roll down hill and shall not be hung up on other trees or vegetation.

Slash Treatment: Treatments of slash is to include slashing, bucking, dispersion, commercial off-site removal, chipping, or piling.

Mandatory Slash treatment shall be concurrent and progressive with the harvesting.

Slash created and/or trees dropped by the Contractor's operations shall not be left outside the unit boundaries unless agreed to in writing by the Forest Service.

Resource Protection: The Contractor shall exercise extreme care to prevent damage to existing facilities, developments, and resources in all aspects of the contract work.

CONTRACTUAL ARRANGEMENT

- (a) This is a contract for the Mandatory and Optional services specified and effective for the period stated in the Contractor's Proposal and made a part of this contract. The quantities of services specified in the Schedule are estimates only and are not purchased by this contract, except as orders are placed in accordance with the ordering clauses. Minimum and maximum quantity requirements, if any, are as stated in A(T)4.4 STEWARDSHIP CREDITS.
- (b) Performance shall be made only as authorized by the Contracting Officer in writing in the form of a Notice to Proceed. Timber Removal activities within the Optional Units shall be scheduled and carried out in accordance with the Contractor's proposal, as approved by the Contracting Officer and in accordance with all relevant provisions of the 2400-13(T) Contract provisions.
- (c) Subject to any limitations in this contract, the Contractor agrees to furnish to the Government the services specified in the Schedule and called for by Task Orders/Payment Unit releases, issued by the Contracting Officer. The Contractor shall furnish to the Government the services specified in A(T)T4.4 STEWARDSHIP CREDITS, up to and including the quantity as shown in A(T)4.4.
- (d) The Government will obtain performance of all services in the Schedule exclusively from the Contractor, until such time as the Government requires performance and the contractor is unable to provide.

ORDERING OF STEWARDSHIP CREDIT MANDATORY AND OPTION WORK ACTIVITIES.

- (a) Authorized Ordering Officials: The following individuals are designated as Ordering Officials under this contract and are authorized to place orders within their respective levels of authority: Contracting Officer or their replacement.
- (b) Ordering Procedure. The Government will determine which Stewardship Credit Work Activity Items are required and place Notice to Proceed orders with the Contractor to provide the item as specified. Reasonable time will be negotiated at time of order to allow for mobilization. Performance period will be agreed to at the time the contract is signed, based upon the RFP, or as otherwise mutually agreed at time of order.

- (c) Contractor Obligation. Upon issuance of a Task Order/Payment Unit Release order, the order becomes a binding contract under all terms and conditions of this contract and the Contractor is obligated to meet the requirements of the order as accepted. Return of the signed order and/or delivery and operation of ordered equipment constitutes acceptance. Failure to accept a task order for Work Activities Items in the Schedule may constitute partial default of the contract.
- (d) Documentation. Facsimile documentation of order and acceptance is acceptable insofar as the documentation thus received is clearly legible. Return of the signed task order to the Ordering Official, by hard copy or FAX, documents acceptance of the order.

INSPECTION AND ACCEPTANCE

A. UNSATISFACTORY PERFORMANCE

If the work is determined to have major defects, the Government will immediately notify the Contractor in writing and order improvement of the quality of future work. If the defects requiring action are not corrected within two consecutive workdays after receipt of notice in writing of unsatisfactory work, the Contractor's right to proceed may be suspended and the contract considered in breach. Repeated failure to perform work at an acceptable quality level shall also be considered breach of contract.

B. REWORK AND REINSPECTION AFTER REWORK

When inspection results show a defect and the deficiency is correctable, payment will not be made until the deficiency has been corrected. Reinspection after rework will be made in the same manner as the first inspection.

C. INSPECTION

CONTRACTOR QUALITY CONTROL PLAN

A. Quality Control Plan

The Contractor shall provide a Quality Control Plan (QCP) as part of the technical proposal. The Plan must demonstrate how the Contractor shall assure that quality of performance meets the objectives and requirements of the contract. The QCP shall specify:

- How quality will be monitored to ensure performance standards are met including but not limited to:
 - plot monumentation, plot information, plot frequency, and plot locations (maps, GPS etc.)
- How the work will be supervised.
- How results of the monitoring will result in quality performance.

- Identify the personnel responsible for performing quality control.
- B. Contractor Quality Control Inspection

The Contractor shall assure that performance meets contract specification prior to requesting the Government to inspect for payment or acceptance. Upon completion of a unit, the Contractor shall contact the Contract Administrator to set a mutually agreed upon date for inspection of completed work. The Contract Administrator may observe the Contractor's inspection at any time and shall otherwise have unlimited access to the inspection data.

GOVERNMENT-QUALITY ASSURANCE SURVEILLANCE PLAN

- A. The Government will conduct periodic on-site inspections and review of the contractor's quality control plan.
 - At least 5% of the Contractor's plots, with a minimum of 2 per unit, will be re-measured by the Government.
 - Minimal numbers of random plots will be done. Emphasis will be Contractor's plot locations.
 - At a minimum, the plot measurements should include information on:
 - 1. Retain all trees above 21" dbh.
 - 2. Retain ft^2 /acre of basal area. Including leave tree species and dbh.
 - 3. Give leave tree preference to the largest trees with good vigor.
 - 4. Give leave tree preference to ponderosa pine and western larch while maintaining a mix of species.
 - 5. Look for opportunities to leave trees in *clumps* of 2 to 4 trees with touching or near touching crowns.
 - The Government will have quality assurance surveillance plot locations for each unit that will be measured in addition to the Contractor's plots.
 - Quality assurance surveillance plot locations will have a digital photo taken in North, East, South, and West directions.

MEASUREMENT AND PAYMENT

MEASUREMENT

The area to be treated is stated in A(T).4.4. All linear and area measurements under this contract are measured on a horizontal plane within the established boundaries. Boundaries are marked with paint, flags and tags in the commercial units and flags and tags in the noncommercial units.

Re-measurement. The Contractor may at any time after award request re-measurement of any sub-item. The request must be in writing within 10 days after completion of a unit or pay item. The Government's re-measurement of the unit/sub item will be made within established boundaries.

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If re-measurement indicates a variance of 5 percent or less in the acreage stated in the list of services, there will be no adjustment in acres and the Contractor shall pay for the actual cost of re-measurement.

If re-measurement results in a variance greater than 5 percent in the acreage stated in the list of services, payment shall be based on the re-measured acreage and the Government shall pay for the re-measurement.

The Government reserves the right to charge for cutting of designated reserve trees under the thinning tree selection criteria at the Damage tree rates as outlined in K(T)-G(T).3.2